

WHAT IS CLAIMED IS:

1. An information recording apparatus for scrambling digital data broken up into predetermined reference units, and recording the scrambled data on a recording medium, comprising:

a scramble processor scrambling digital data for each predetermined reference unit using a randomly generated scramble pattern; and

a recording controller recording scramble pattern information for specifying the scramble pattern used in scrambling by said scramble processor on the recording medium.

2. An information recording apparatus for scrambling digital data broken up into predetermined reference units, appending predetermined additional information to the scrambled data, and recording the data on a recording medium, comprising:

a scramble processor scrambling digital data for each predetermined reference unit using a randomly generated scramble pattern; and

a recording controller recording scramble pattern information for specifying the scramble pattern used in scrambling by said scramble processor on the recording medium to be included in the additional information.

3. An apparatus according to claim 2, wherein the additional information is allocated at a head of each reference unit, and has identification information for

identifying the reference unit, and

said recording controller records the scramble pattern information on the recording medium between the identification information and the digital data.

5 4. An apparatus according to claim 2, wherein the additional information is scrambled and is recorded on the recording medium.

10 5. An apparatus according to claim 2, wherein said scramble processor scrambles digital data for the reference unit to be written at an identical position of the recording medium using a different scramble pattern for each write.

15 6. An information recording method for scrambling digital data broken up into predetermined reference units, and recording the scrambled data on a recording medium, comprising:

the scramble processing step of scrambling digital data for each predetermined reference unit using a randomly generated scramble pattern; and

20 the recording control step of recording scramble pattern information for specifying the scramble pattern used in scrambling in the scramble processing step on the recording medium.

25 7. An information recording method for scrambling digital data broken up into predetermined reference units, appending predetermined additional information to the scrambled data, and recording the data on a

recording medium, comprising:

the scramble processing step of scrambling digital data for each predetermined reference unit using a randomly generated scramble pattern; and

5 the recording control step of recording scramble pattern information for specifying the scramble pattern used in scrambling in the scramble processing step on the recording medium to be included in the additional information.

10 8. A method according to claim 7, wherein the additional information is allocated at a head of each reference unit, and has identification information for identifying the reference unit, and

the recording control step includes the step of
15 recording the scramble pattern information on the recording medium between the identification information and the digital data.

9. A method according to claim 7, wherein the additional information is scrambled and is recorded on
20 the recording medium.

10. A method according to claim 7, wherein the scramble processing step includes the step of scrambling digital data for the reference unit to be written at an identical position of the recording
25 medium using a different scramble pattern for each write.

11. An information reproduction apparatus for

reproducing a recording medium on which digital data that have been broken up into predetermined reference units and have been scrambled respectively using randomly generated scramble patterns, and scramble pattern information for specifying the scramble pattern used to scramble each piece of digital data of the predetermined reference unit are recorded, comprising:

a descramble pattern generator generating a corresponding descramble pattern on the basis of the scramble pattern information read from the recording medium; and

a descramble processor descrambling the digital data of the reference unit read from the recording medium on the basis of the descramble pattern generated by said descramble pattern generator.

12. An information reproduction apparatus for reproducing a recording medium on which digital data that have been broken up into predetermined reference units and have been scrambled respectively using randomly generated scramble patterns, and additional information appended to each digital data of the predetermined reference unit and containing scramble pattern information for specifying the scramble pattern used to scramble each digital data of the predetermined reference unit are recorded, comprising:

a descramble pattern generator extracting the scramble pattern information from the additional

information read from the recording medium, and
generating a corresponding descramble pattern on the
basis of the scramble pattern information; and

5 a descramble processor descrambling the digital
data of the reference unit read from the recording
medium on the basis of the descramble pattern generated
by said descramble pattern generator.

10 13. An information reproduction method for
reproducing a recording medium on which digital data
that have been broken up into predetermined reference
units and have been scrambled respectively using
randomly generated scramble patterns, and scramble
pattern information for specifying the scramble pattern
used to scramble each piece of digital data of the
15 predetermined reference unit are recorded, comprising:

the descramble pattern generation step of
generating a corresponding descramble pattern on the
basis of the scramble pattern information read from the
recording medium; and

20 the descramble processing step of descrambling the
digital data of the reference unit read from the
recording medium on the basis of the descramble pattern
generated in the descramble pattern generation step.

25 14. An information reproduction method for
reproducing a recording medium on which digital data
that have been broken up into predetermined reference
units and have been scrambled respectively using

randomly generated scramble patterns, and additional information appended to each digital data of the predetermined reference unit and containing scramble pattern information for specifying the scramble pattern used to scramble each digital data of the predetermined reference unit are recorded, comprising:

the descramble pattern generation step of extracting the scramble pattern information from the additional information read from the recording medium, and generating a corresponding descramble pattern on the basis of the scramble pattern information; and

the descramble processing step of descrambling the digital data of the reference unit read from the recording medium on the basis of the descramble pattern generated in the descramble pattern generation step.